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FIGURE 1A
FIGURE 1B
FIGURE 1C
FIGURE 1D

FIGURE 1



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FtsZ-mt2 consensus2 Map.MPD (1 > 1423) Site and Sequence

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Enzymes: 50 of 502 enzymes (Filtered)

Settings: Circular, Certain Sites Only, Standard Genetic Code

EcoRV
|
GATGGCGATATCCCGCATGAAAGCTGCGGCGATGGCGCTGCTACGTGCCCGCCAGACCTCCCAGTCCGCCACTCA 75
CTACCGCTATAGGGCGTACTTTCGACGCGCTACCGCGACGATGCACGGGCGGTCTGGAGGGTCAGGCGGTGAGT
Met Ala Ile Ser Arg Met Lys Ala Ala Ala Met Ala Leu Leu Arg Ala Arg Gln Thr Ser Gln Ser Ala Thr Gln
Pst I
|
Pvu II
|
Taq I
|
ACACCTCGCCTTCTCTACTGAAGCCACTGATGCTGCAGCTGCCGCGTTACGCATGGGCTTTAAAAAGGCTCGAAA 150
TGTGGAGCGGAAGAGATGACTTCGGTGACTACGACGTCGACGGCGCAATGCGTACCCGAAATTTTCCGAGCTTT
His Leu Ala Phe Ser Thr Glu Ala Thr Asp Ala Ala Ala Ala Leu Arg Met Gly Phe Lys Lys Ala Arg Lys
Taq I
|
AGACGAGGATGGCGGTGTGAAAGTGGGGCTGGAGGCAGAGCCCGATTACCAACAGATGTGAGCGCCGTTTCGAC 225
TCTGCTCCTACCGCCACACTTTCACCCGACCTCCGCTCTCGGGCTAAGTGGTTGTCTACACTCGCGGCAAGCTG
Asp Glu Asp Gly Gly Val Lys Val Gly Leu Glu Ala Glu Pro Asp Ser Pro Thr Asp Val Ser Ala Val Ser Thr
Sac I
|
GCCAGTAGTAGAGAAGAAGCTCGTGCCGCCAGCCATGAGCTCCACACAGCCACTTTGGCTCACACAGGACCATCC 300
CGGTCATCATCTCTTTCGAGCACGGCGGTGGTACTCGAGGTGTGTCGGTCAAACCGAGTGTGTCTGTTAGG
Pro Val Val Glu Lys Lys Leu Val Pro Pro Ala Met Ser Ser Thr Gln Pro Leu Trp Leu Thr Gln Asp His Pro
TGTGACAGACCTGTCTGGGCTTTCACCGAAGATTGTGGTGGTTGGCGTCGGAGGAGCTGGAGGAAATGCGGTGAA 375
ACACTGTCTGGACAGCCCGAAACGTGGCTTCTAACACCACCAACCGAGCTCCTCGACCTCCTTTACGCCACTT
Val Thr Asp Leu Ser Gly Phe Ala Pro Lys Ile Val Val Gly Val Gly Gly Ala Gly Gly Asn Ala Val Asn

FIGURE 1A



FtsZ-mt2 consensus2 Map.MPD (1 > 1423) Site and Sequence

Sau3A BssH II Pst I Bln I

CAACATGATCGCGCGCGCCTGCAGGGTGTGGAGTTTCTTGTTCACACGGATGCTCAGCACTTACGCACGAC 450
GTTGTACTAGCGCGCGCGGACGTCCACACCTCAAAGAACAACGTTGTGCCTACGAGTCGTGAATGCGTGCTG
Asn Met Ile Ala Arg Gly Leu Gln Gly Val Glu Phe Leu Val Cys Asn Thr Asp Ala Gln His Leu Arg Thr Thr

GCTGACGGAGAACC GCGTTCAGATGGCTCCTGAATTGACTGGAGGACTGGGCTGTGGCGCTAACCCGAAGTTGG 525
CGACTGCCTCTTGGCGCAAGTCTACCGAGGACTTAAGTACCTCCTGACCCGACACCGCGATTGGGGCTTCAACC
Leu Thr Glu Asn Arg Val Gln Met Ala Pro Glu Leu Thr Gly Gly Leu Gly Cys Gly Ala Asn Pro Glu Val Gly

CCGAGAGGGCGCAGAGGCCGCGATTGATGAGATTTTGGAGCGCGTTCAGGGTGCAAACATGATGTTTGTACTGC 600
GGCTCTCCGCGCTCTCCGGCGCTAACTACTCTAAAACCTCGCGCAAGTCCACGTTTGTACTACAAACAATGACG
Arg Glu Ala Ala Glu Ala Ala Ile Asp Glu Ile Leu Glu Arg Val Gln Gly Ala Asn Met Met Phe Val Thr Ala

Sac I

GGGTATGGGTGGCGAACAGGTACAGGTGCAGCACCCGTCATTGCTCAGGCTGCCTTAGATGCTGGTATCCTCAC 675
CCCATACCCACCGCCTTGTCCATGTCCACGTCGTGGGCAGTAACGAGTCCGACGGAATCTACGACCATAGGAGTG
Gly Met Gly Gly Gly Thr Gly Thr Gly Ala Ala Pro Val Ile Ala Gln Ala Ala Leu Asp Ala Gly Ile Leu Thr

CGTAGCTGTCGTTACTAAGCCGTTCCGGTTTGGGGAAACAACCGTGCAAAGCTTGCGGCACAAGGCCTCGCTGA 750
GCATCGACAGCAATGATTTCGCAAGGCCAACTCCCTTTGTGGCACGTTTCGAACGCCGTGTTCCGGAGCGACT
Val Ala Val Val Thr Lys Pro Phe Arg Phe Glu Gly Asn Asn Arg Ala Lys Leu Ala Ala Gln Gly Leu Ala Glu

Sac I

ACTGAAGGATAGCGTCGATACGATGCTTGTGATCCCGAACCAAACTTGTTCACATGTCAAATGAGCGCACCTC 825
TGACTTCCTATCGCAGCTATGCTACGAACACTAGGGCTTGGTTTGAACAAGTTGTACAGTTTACTCGCGTGGAG
Leu Lys Asp Ser Val Asp Thr Met Leu Val Ile Pro Asn Gln Asn Leu Phe Asn Met Ser Asn Glu Arg Thr Ser

FIGURE 1B



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FtsZ-mt2 consensus2 Map.MPD (1 > 1423) Site and Sequence

GTGATGGACGCATTGAGATGGCGGACAATGTGCTTCTGGACGGTGTCAAGAACATTCGGATTGATGGTGAT
CAACTACCTGCGTAAGTCTTACCGCCTGTACACGAAGACCTGCCACAGTTCTTGTAAGCCTAACTACCACTA 900

Leu Met Asp Ala Phe Arg Met Ala Asp Asn Val Leu Leu Asp Gly Val Lys Asn Ile Ser Asp Leu Met Val Met

CCCTGGGCTCATTAACTTGACTTTGCGGATGTTCAATCGGTGATGCAAAATATGGGAAACGCTATGATGGGAAG
CGGACCCGAGTAATTGGAAGTGAACGCCTACAAGTTAGCCAGTACGTTTATACCCCTTGCGATACTACCCCTC 975

Pro Gly Leu Ile Asn Leu Asp Phe Ala Asp Val Gln Ser Val Met Gln Asn Met Gly Asn Ala Met Met Gly Ser

Nal I

TGGAGAGCCGATGGAGAGAATCGGGCTCTGCGTGCTGAAGATGCATTGGCGAACCCCTCTTCTGGGTGATAT
ACCTCTCCGGCTACCTCTCTTAGCCCGAGACGCACGACTTCTACGTAACCGCTGGGAGAAGACCCACTATA 1050

Gly Glu Ala Asp Gly Glu Asn Arg Ala Leu Arg Ala Ala Glu Asp Ala Leu Ala Asn Pro Leu Leu Gly Asp Ile

Taq I

Sau3A I

TTGATTAAGGACGCCAAGGGCATGATCGTTAATATCACGGGAGGCTCCGACCTGACGCTATTGAAAGTTGATGA
AAGCTAATTCCTGCGGTTCCCGTACTAGCAATTATAGTGCCTCCGAGGCTGGACTGCGATAAACTTCAACTACT 1125

Ser Ile Lys Asp Ala Lys Gly Met Ile Val Asn Ile Thr Gly Gly Ser Asp Leu Thr Leu Phe Glu Val Asp Glu

Bip I

Sau3A I

Taq I

Taq I

GGCTGCTGAGCGTGTGACGCGGGAACCTGATGATCCACAGCCAACATCATCTTCGGTTCGACCTTCGACGACTC
CCGACGACTCGCACACTGCGCCCTTGAAGTACTAGGTGTGCGGTGTAGTAGAAGCCAAGCTGGAAGCTGCTGAG 1200

Ala Ala Glu Arg Val Thr Arg Glu Leu Asp Asp Pro His Ala Asn Ile Ile Phe Gly Ser Thr Phe Asp Asp Ser

Afl III
Mlu I

GCTGGGCGGCAAGCTACGCTCTCCGTGGTGGCACTGGTATTGCCGACCCGACAAGTTATAGAAGCCGTGATG
CGACCCCGCGTTCGATGCGCAGAGGCACCAACGGTGACCATAACGGCTGGGGCTGTTCAATATCTTCGGCACTAC 1275

Leu Gly Gly Lys Leu Arg Val Ser Val Val Ala Thr Gly Ile Ala Asp Pro Asp Lys Leu *

FIGURE 1C

FIGURE 1D



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FIGURE 2A
FIGURE 2B
FIGURE 2C
FIGURE 2D

FIGURE 2



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	Source Organism (organelle)	GenBank Accession No.
SEQ ID NO: 11	<i>Agrobacterium tumefaciens</i>	030992
SEQ ID NO: 12	<i>Sinorhizobium melilot</i>	P30327
SEQ ID NO: 13	<i>Bartonella clarridgeiae</i>	AAD31718
SEQ ID NO: 14	<i>Rickettsia prowazekii</i>	Q9ZCQ3
SEQ ID NO: 15	<i>Caulobacter crescentus</i>	P52976
SEQ ID NO: 16	<i>Cyanidioschyzon merolae</i> (mt)	BAA85115
SEQ ID NO: 4	<i>Phytophthora infestans</i> -mt2	this invention
SEQ ID NO: 17	<i>Mallomonas splendens</i> (mt)	AAF35432
SEQ ID NO: 2	<i>Phytophthora infestans</i> -mt1	this invention
SEQ ID NO: 18	<i>Gentiana lutea</i> (cp)	T51088
SEQ ID NO: 19	<i>Nicotiana tabacum</i> (cp, 2-1)	T51087
SEQ ID NO: 20	<i>Arabidopsis thaliana</i> (cp, 2-1)	T49028
SEQ ID NO: 21	<i>Physcomitrella patens</i> (cp, 1)	T51089
SEQ ID NO: 22	<i>Physcomitrella patens</i> (cp, 2)	T51090
SEQ ID NO: 23	<i>Guillardia theta</i> (cp)	CAB40398
SEQ ID NO: 24	<i>Mallomonas spendens</i> (cp)	AAF35433
SEQ ID NO: 25	<i>Anabaena</i> PCC7120	CAA83241
SEQ ID NO: 26	<i>Synechocystis</i> PCC6803	P73456
SEQ ID NO: 27	<i>Arabidopsis thaliana</i> (cp, 1-1)	Q42545
SEQ ID NO: 28	<i>Pisum sativum</i> (cp)	T06774
SEQ ID NO: 29	<i>Nicotiana tabacum</i> (cp, 1-3)	CAB89287
SEQ ID NO: 30	<i>Nicotiana tabacum</i> (cp, 1)	CAB41987
SEQ ID NO: 31	<i>Nicotiana tabacum</i> (cp, 1-1)	CAB89286
SEQ ID NO: 32	<i>Nicotiana tabacum</i> (cp, 2)	AAF23770
<u>Bacterial FtsZ</u>		
	1	50
SEQ ID NO: 11	PRITVFGVGGGGGNAVNMMITVGLQGVDFVANTDAQALMT..KADRVIQLGVNVTEGL	
SEQ ID NO: 12	PRITVFGVGGGGGNAVNMMITAGLQGVDFVANTDAQALMT..KAERIIQMGVAVTEGL	
SEQ ID NO: 13	PRITVFGVGGGGGNAVNMMINAGLQGVDFVANTDAQALAMS..KAERVIQLGAAVTEGL	
SEQ ID NO: 14	PTITVFGVGGAGSNAVNMMIHANLQGANFVANTDAQSLEHS..LCINKIQLGVSTTRGL	
SEQ ID NO: 15	PRIVFGVGGAGGNAVNMMIEAGLEGVEFVANTDAQQLQFA..KTDRIQLGVQITQGL	
<u>Mitochondrial FtsZ</u>		
SEQ ID NO: 16	PRIMVGVGGAGGNAVNMMIASSLPGVEFLVANTDAQALKMS..LCPNRIQLGASLTEGL	
SEQ ID NO: 4	PKIVVGVGGAGGNAVNMMIARGLQGVFLVCNTDAQHLRTT..LTENRVQMAPELTGGL	
SEQ ID NO: 17	PKICVFGVGGGGCNAVNMMIARKLSGVEFVCANTDAQHLSTC..LTENKLQLGKESTQGL	
SEQ ID NO: 2	AS.....QLEGVEFIVANTDCQALGRS..LAPHKITLKGDKITKGL	
<u>Chloroplast FtsZ</u>		
SEQ ID NO: 18	AKIKVGVGGGGGSAVNRMIESAMKGVFWIVNTDVQAIKMSPVYLENRLQIGQELTRGL	
SEQ ID NO: 19	AKIKVGVGGGGGSAVNRMIESSMKGVFWIVNTDIQAMRMSPVAAEQRLPIGQELTRGL	
SEQ ID NO: 20	ARIKIVGVGGGGGSAVNRMIESEMSGVFWIVNTDIQAMRMSPVLPDNRLQIGKELTRGL	
SEQ ID NO: 21	AKIKVGVGGGGGSAVNRMIESEMVGVEFWIVNTDAQAMALSPVPAQNRLQIGQKLTRGL	
SEQ ID NO: 22	AKIKVGVGGGGGSAVNRMIESEMVGVEFWIVNTDAQAMALSPVPAQNRLQIGQKLTRGL	
SEQ ID NO: 23	CVIKVGVGGGGGSAVNRMVG.GVEGVFWISINTDAQALSRS..LAPNTCNIGAKLTRGL	
SEQ ID NO: 24GVELVWVNTDAQALSRS..SAKRRLNIGKVLRSGL	
SEQ ID NO: 25	ANIKVGVGGGGGSAVNRMIESDVSGVEFWISINTDAQALTLA..GAPSRQLQIGQKLTRGL	
SEQ ID NO: 26	AKIKVGVGGGGGSAVNRMIASVGTGIDFWAINTDSQALTNT..NAPDCIQIGQKLTRGL	
SEQ ID NO: 27	ARIKIVGVGGGGGSAVNRMISGLQGVDFYAINTDQALLQFSA..ENPLQIGELLTRGL	
SEQ ID NO: 28	AKIKVGVGGGGGSAVNRMIGSGLQGVDFYAINTDQALLHSAA..ENPIKIGELLTRGL	
SEQ ID NO: 29	AKIKVGVGGGGGSAVNRMIGSGLQGVDFYAINTDQALLQSAA..ENPLQIGELLTRGL	
SEQ ID NO: 30	AKIKVGVGGGGGSAVNRMIGSGLQGVDFYAINTDQALLQSAA..ENPLQIGELLTRGL	
SEQ ID NO: 31	AKIKVGVGGGGGSAVNRMIGSGLQGVDFYAVNTDAQALLQSTV..ENPIQIGELLTRGL	
SEQ ID NO: 32	AKIKVGVGGGGGSAVNRMIGSGLQGVDFYAVNTDAQALLQSTV..ENPIQIGELLTRGL	

FIGURE 2A



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Bacterial FtsZ 60 110

SEQ ID NO: 11 GAGSQPEVGRAAAEECID E I D H L N G T H M C F V T A G M G G G T G T G A A P V V A Q A A R N K G I L T V

SEQ ID NO: 12 GAGSQPEVGRAAAEECID E I D H L Q G T H M C F V T A G M G G G T G T G A A P I V A Q A A R N K G I L T V

SEQ ID NO: 13 GAGALPEVGRAAAEECID E I D H L A D S H M V F I T A G M G G G T G T G A A P V V A N A A R E K G I L T V

SEQ ID NO: 14 GAGASPEVGALAAQESENEIRSSLENSNMVFITAGMGGGTGTGSAPIIARIAKELGILTV

SEQ ID NO: 15 GAGAHPEVGMSAAEESFPEIGEHL D G A H M V F I T A G M G G G T G T G A A P I I A K C A R E R G I L T V

Mitochondrial FtsZ

SEQ ID NO: 16 GAGARPDIGRAAAEEAYETLKREFRGVHLLFVTAGMGGGTGTGAAPIIARAAAELGCLTV

SEQ ID NO: 4 GCGANPEVGREAAEA A I D E I L E R V Q G A N M F V T A G M G G G T G T G A A P V I A Q A A L D A G I L T V

SEQ ID NO: 17 GCGANPESGRRAAEE S K E E I A R Y I A D A N M V F I T A G M G G G T G T G A A P V V A E V C M E K D I L T V

SEQ ID NO: 2 GAGSKPELGKRS AE Q Q K V D I Q R M L Q D S N M L F I T G M G G G T C T G A A P V V A S V A R E L G I L T V

Chloroplast FtsZ

SEQ ID NO: 18 GAGGNPDIGMNAAKESKEAIEEAVYGADMVFVTAGMGGGTGTGGAPVIAGIAKSMGILTV

SEQ ID NO: 19 GAGGNPDIGMNAANESKQ A I E E A V Y G A D M V F V T A G M G G G T G T G A A P I I A G T A K S M G I L T V

SEQ ID NO: 20 GAGGNPEIGMNAARESKEVIEEALYSDMVFTAGMGGGTGTGAAPVIAGIAKAMGILTV

SEQ ID NO: 21 GAGGNPEIGCSAAEESKAMVEEALRGADMVFVTAGMGGGTGSGAAPIIAGVAKQLGILTV

SEQ ID NO: 22 GAGGNPEIGCSAAEESKAMVEEALRGADMVFVTAGMGGGTGSGAAPIIAGVAKQLGILTV

SEQ ID NO: 23 GAGGNPEIGRKA A E E S R D L I A E A V S A G D L V F V T A G M G G G T G S G A A P I V A E V A K E M G C L T V

SEQ ID NO: 24 GAGGNPAIGAKAAEESREEIMAVVNADLVFVTAGMGGGTGSGAAPVVAECAKEAGALT V

SEQ ID NO: 25 GAGGNPAIGQKAAEESRDEIATALEGADLVFITAGMGGGTGTGAAPIVAEVAKEMGALT V

SEQ ID NO: 26 GAGGNPAIGQKAAEESRDEIARSLEGLD LV F I T A G M G G G T G T G A A P I V A E V A K E M G C L T V

SEQ ID NO: 27 GTGGNPLLGEQAAEESKDAIANALKGS D L V F I T A G M G G G T G S G A A P V V A Q I S K D A G Y L T V

SEQ ID NO: 28 GTGGNPLLGEQAAEESKEA I A N A L K G S D L V F I T A G M G G G T G S G A A P V V A Q I S K E A G Y L T V

SEQ ID NO: 29 GTGGNPLLGEQAAEESKEA I A N S L K G S D M V F I T A G M G G G T G S G A A P V V A Q I A K E A G Y L T V

SEQ ID NO: 30 GTGGNPLLGEQAAEESKEA I A N S L K G S D M V F I T A G M G G G T G S G A A P V V A Q I A K E A G Y L T V

SEQ ID NO: 31 GTGGNPLLGEQAAEESKEH I A N A L K G S D M V F I T A G M G G G T G S G A A P V V A Q I A K E A G Y L T V

SEQ ID NO: 32 GTGGNPLLGEQAAEESKEH I A N A L K G S D M V F I T A G M G G G T G S G A A P V V A Q I A K E A G Y L T V

Bacterial FtsZ 120 170

SEQ ID NO: 11 GVVTKPFHFEGGRRMRLAEQGI E E L Q K S V D T L I V I P N Q N L F R I A N D K T T F A D A F A M A D Q V

SEQ ID NO: 12 GVVTKPFHFEGGRRMRIA D Q G I S D L Q K S V D T L I V I P N Q N L F R I A N D K T T F A D A F A M A D Q V

SEQ ID NO: 13 GVVTKPFQFEGARRMKTAEAGIEELQKSVDTLIVIPNQNLFR I A N E K T T F S D A F A M A D Q V

SEQ ID NO: 14 GVVTKPFHFEGGHRMKTADKGLIELQQFVDTLIVIPNQNLFR I A N E Q T T F A D A F K M A D D V

SEQ ID NO: 15 GVVTKPFHFEGRRMRLADSGIQELQRYVDTLIVIPNQNLFRVANERTTFAEAFGMADQV

Mitochondrial FtsZ

SEQ ID NO: 16 AVVTKPFHFEGMIRMKTAEQGI V E L T E H V D T M L V I P N Q N L F K V A S P R T S F L D A F R L A D H V

SEQ ID NO: 4 AVVTKPFRFEGNNRAKLAAGLAE L K D S V D T M L V I P N Q N L F N M S N E R T S L M D A F R M A D N V

SEQ ID NO: 17 AVVTKPFSFEGKHRARLANEGIRSLED R V D T L I I I P N Q N I F K L I N A S T S M A D A F L A D D I

SEQ ID NO: 2 GVVSTPFRSEGPNRTRLANAGVKELAKYVDTLIVVPNQNL L A L A D K S T T M L E A F R Y A D D V

Chloroplast FtsZ

SEQ ID NO: 18 GIVTTPFSFEGRRRAVQAQEGIAALRDNDVT L I V I P N D K L L T A V S P S T P V T E A F N L A D D I

SEQ ID NO: 19 GIVTTPFSFEGRRRAVQAQEGIAALRENDVT L I V I P N D K L L T A V S P S T P V T E A F N L A D D I

SEQ ID NO: 20 GIATTPFSFEGRRRTVQAQEGLASLRDNDVT L I V I P N D K L L T A V S Q S T P V T E A F N L A D D I

SEQ ID NO: 21 GIVTTPFAFEGRRRAVQAHEGIAALKNNVDTLITIPNNKLLTAVAQSTPVTEAFNLADDI

SEQ ID NO: 22 GIVTTPFAFEGRRRSVQAHEGIAALKNNVDTLITIPNNKLLTAVAQSTPVTEAFNLADDI

SEQ ID NO: 23 GVVTKPFAFEGKRRMQQANDAILNLRNKVDTLIVVSN D K L L Q I V P D N T P L Q D A F S V A D D I

SEQ ID NO: 24 GVVTKPFGFEGKRRMQQARNAIL E M K D K V D T L I V V S N D K L L K I V P D N T P L T E A F L V A D D I

SEQ ID NO: 25 GVVTRPFVFEGRRTSQAEGIEGLKSRVDTLIIIPNNKLL E V I P E Q T P V Q E A F R Y A D D V

SEQ ID NO: 26 GIVTRPFTFEGRRRAKQAE E G I N A L Q S R V D T L I V I P N N Q L L S V I P A E T P L Q E A F R V A D D I

SEQ ID NO: 27 GVVTPPFSFEGKRSLQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQDAFLLADDV

SEQ ID NO: 28 GVVTPPFSFEGKRSLQALEAIEKLQKNVDTLIVIPNDRLLDIADEQMPLQDAFRLADDV

SEQ ID NO: 29 GVVTPPFSFEGKRSVQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQDAFLLADDV

SEQ ID NO: 30 GVVTPPFSFEGKRSVQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQDAFLLADDV

SEQ ID NO: 31 GVVTPPFSFEGKRSLQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQNAFLLADDV

SEQ ID NO: 32 GVVTPPFSFEGKRSLQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQNAFLLADDV

FIGURE 2B



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Bacterial FtsZ 180 230

SEQ ID NO: 11 LYSGVACITDLMVKEGLINLDFADVRSVMREMARPMGMTGE...ASGPARAMQAAEAAI
SEQ ID NO: 12 LYSGVACITDLMVKEGLINLDFADVRSVMREMGRAMMGTGE...ASGEGRAMAAEAAI
SEQ ID NO: 13 LYSGVASITDLMIKEGLINLDFADVRSVMHEMGRAMMGTGE...ASGDGRALAAEAAI
SEQ ID NO: 14 LHAGVRGVTDLMIMPGLINLDFADIKAVMSEMKGAMMGTGE...DSGEDRAIKAAESAI
SEQ ID NO: 15 LHSGVRSITDLMVLPGLINLDFADVRTVMTEMKGAMMGTGE...GTAEDRALMAAQNAI

Mitochondrial FtsZ

SEQ ID NO: 16 LYSGVRSITDLMTPVPLINLDFADVRSVREMGRAMMGSSEVEMEAGNEERAIRASEAAI
SEQ ID NO: 4 LLDGVKNISDLMVMPGLINLDFADVQSVMQNMGNAMMGSSEAD...GENRALRAEDAL
SEQ ID NO: 17 LLAGVKSITDLMVRPGLINLDFADVRTVMSCMGHAIMGTGOAE...GEDRAIRAANDAL
SEQ ID NO: 2 LLEGVKGVTDLIVRPGLINL.....

Chloroplast FtsZ

SEQ ID NO: 18 LRQGVRGISDIITIPGLVNVDFAVRAIMANAGSSLMGIGT...ATGKTRARDAALNAI
SEQ ID NO: 19 LRQGVRGISDIITIPGLVNVDFAVRAIMANAGSSLMGIGT...ATGKTRARDAALNAI
SEQ ID NO: 20 LRQGVRGISDIITIPGLVNVDFAVRAIMANAGSSLMGIGT...ATGKSRARDAALNAI
SEQ ID NO: 21 LRQGVRGISDIITIPGLVNVDFAVRAIMANAGSSLMGIGT...ATGKSRAREAAALSAI
SEQ ID NO: 22 LRQGVRGISDIITIPGLVNVDFAVRAIMANAGSSLMGIGT...ATGKSKAREAAALSAI
SEQ ID NO: 23 LRQGVVGISEIIVRPGLINVDFAVRSVMADAGSALMGIGT...GSGKTRAQDAAVAAI
SEQ ID NO: 24 LRQGVVGITEIIVKPGLVNVDFAVVRTIMGNAGTALMGIGH...GKGKNAKDAALSAI
SEQ ID NO: 25 LRQGVQGISDIITIPGLVNVDFAVRAVMADAGSALMGIGV...SSGKSAREAAIAAI
SEQ ID NO: 26 LRQGVQGISDIITIPGLVNVDFAVRAVMADAGSALMGIGV...GSGKSRAKEAATAAI
SEQ ID NO: 27 LRQGVQGISDIITIPGLVNVDFAVKAVMKDSGTAMLGVGV...SSSKNRAEEAAEQAT
SEQ ID NO: 28 LRQGVQGISDIITIPGLVNVDFAVKAVMKDSGTAMLGVGV...SSSKNRAEEAAEQAT
SEQ ID NO: 29 LRQGVQGISDIITIPGLVNVDFAVKAVMKDSGTAMLGVGV...SSSKNRAEEAAEQAT
SEQ ID NO: 30 LRQGVQGISDIITIPGLVNVDFAVKAVMKDSGTAMLGVGV...SSSKNRAEEAAEQAT
SEQ ID NO: 31 LCQGVQGISDIITIPGLVNVDFAVKAIMKDSGTAMLGVGV...SSSRNRAEEAAEQAT
SEQ ID NO: 32 LCQGVQGISDIITIPGLVNVDFAVKAIMKDSGTAMLGVGV...SSSRNRAEEAAEQAT

Bacterial FtsZ 240 290

SEQ ID NO: 11 ANPLLD.ETSMKGAQGLLISITGGRDLTLFEVDEAATRIREEVDP.DANIILGATFDEAL
SEQ ID NO: 12 ANPLLD.ETSMKGAQGLLISITGGRDLTLFEVDEAATRIREEVDP.DANIILGATFDEEL
SEQ ID NO: 13 ANPLLD.DTSMRGARGLLISITGGRDMTLFEVDEAANRIREEVDA.DANVIFGAIDDESL
SEQ ID NO: 14 SNPLLD.HSSMCGARGVLINITGGPDMTLFEVDNAANRIREEVDNIDANIIFGSTFNPEL
SEQ ID NO: 15 ANPLLD.EVSLKGAKAVLVNVTGGMDMTLFEVDEAANAISDQVDP.EANIIFGAADFPSL

Mitochondrial FtsZ

SEQ ID NO: 16 CNPLLD.ETSLRGARGVLVNITGGTDMTLFEIDAAANRIREQVDP.DANIIFGSAFDASM
SEQ ID NO: 4 ANPLLG.DISIKDAKGMIVNITGGSDDLTLFEVDEAAERVTRERLDDPHANIIFGSTFDDSL
SEQ ID NO: 17 NNPLLGDFSRSKAGMLVNITGGKDLTLFEVDAAAQRITSEIEDEDANVIFGSSFDPSL
SEQ ID NO: 2

Chloroplast FtsZ

SEQ ID NO: 18 QSPLLD..IGIERATGIVWNITGGSDDLTLFEVNAAAEEVIYDLVDP.SANLIFGAVVDPDSL
SEQ ID NO: 19 QSPLLD..IGIERATGIVWNITGGSDDLTLFEVNAAAEEVIYDLVDP.SANLIFGAVIDPSI
SEQ ID NO: 20 QSPLLD..IGIERATGIVWNITGGSDDLTLFEVNAAAEEVIYDLVDP.TANLIFGAVVDPAL
SEQ ID NO: 21 QSPLLD..VGIERATGIVWNITGGSDDLTLFEVNAAAEEVIYDLVDP.NANLIFGAVVDEAL
SEQ ID NO: 22 QSPLLD..VGIERATGIVWNITGGSDDLTLFEVNAAAEEVIYDLVDP.NANLIFGAVVDEAL
SEQ ID NO: 23 SSPLLD..FPIEKARGIVFNITGGQDMTLHEINSAAEVIYEAVDS.NANIIFGALVDDNM
SEQ ID NO: 24 SSPLLD..FPITRAKGIVFNIVGGSMSLQEIINAAAEEVIYENVVQ.DANIIFGAMVDDKM
SEQ ID NO: 25 SSPLLE..CSIEGARGVFNITGGSDDLTLHEVNAAAETIYEVVDP.NANIIFGAVIDDRL
SEQ ID NO: 26 SSPLLE..SSIQAGKGVFNITGGTDLTLHEVNAAEIIYEVVDA.DANIIFGAVIDDRL
SEQ ID NO: 27 LAPLIG..SSIQSATGVVYNITGGKDITLQEVNRSQVVTSLADP.SANIIFGAVVDDRY
SEQ ID NO: 28 LAPLIG..SSIQSATGVVYNITGGKDITLQEVNRSQVVTSLADP.SANIIFGAVVDDRY
SEQ ID NO: 29 LAPLIG..SSIQSATGVVYNITGGKDITLQEVNRSQVVTSLADP.SANIIFGAVVDERY
SEQ ID NO: 30 LAPLIG..SSIQSATGVVYNITGGKDITLQEVNRSQVVTSLADP.SANIIFGAVVDERY
SEQ ID NO: 31 LAPLIG..LSIQSATGVVYNITGGKDITLQEVNKSQVVTSLADP.SANIIFGAVVDERY
SEQ ID NO: 32 LAPLIG..SSIQSATGDVYNITGGKDITLQEVNKSQVVTSLADP.SANIIFGAVVDERY

FIGURE 2C



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Bacterial FtsZ 300
SEQ ID NO: 11 E.GLIRSVVATGI
SEQ ID NO: 12 E.GLIRSVVATGI
SEQ ID NO: 13 E.GVIRSVVATGI
SEQ ID NO: 14 K.GIIRSVVATGI
SEQ ID NO: 15 E.GVIRSVVATGM
Mitochondrial FtsZ
SEQ ID NO: 16 Q.GRLRVSLATGI
SEQ ID NO: 4 G.GKLRVSVVATGI
SEQ ID NO: 17 Q.GSIRSVIVATGI
SEQ ID NO: 2
Chloroplast FtsZ
SEQ ID NO: 18 C.GQVSITLIATGF
SEQ ID NO: 19 S.GQVSITLIATGF
SEQ ID NO: 20 S.GQVSITLIATGF
SEQ ID NO: 21 H.GQVSITLIATGF
SEQ ID NO: 22 H.DQISITLIATGF
SEQ ID NO: 23 EN.EISITVVATGF
SEQ ID NO: 24 TSGEVSITVLATGF
SEQ ID NO: 25 Q.GEVKITVIATGF
SEQ ID NO: 26 Q.GEMRITVIATGF
SEQ ID NO: 27 .TGEIHVTIIATGF
SEQ ID NO: 28 .TGEIHVTIIATGF
SEQ ID NO: 29 .NGEIHVTIIATGF
SEQ ID NO: 30 .NGEIHVTIIATGF
SEQ ID NO: 31 .NGEIQVTIIATGF
SEQ ID NO: 32 .NGEIQVTIIATGF

FIGURE 2D



FIGURE 3

